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RUBBER INDUSTRY OF CAMBODIA

By A. Gontard

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FOREWORD

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RUBBER INDUSTRY OF CAMBODIA

Following is the translation of a continued article by A. Gontard in Realities Cambodgiennes, Phnom Penh, 15, 22, and 29 July; 5, 12, 19, and 27 August; and 2 September 1960.]

1. Introduction (15 July 1960)

Cambodia possesses still unknown tourist attractions. Until now the emphasis has rather naturally been placed on the incontestable interest in the monuments of Angkor and on some bathing and health resorts such as Kep and Bokor. The possibilities of hunting for big game have equally been pointed out. But has anyone thought of tourist trips through the immense rubber forests and, under certain authorized conditions, the organization of group visits to some of the more important latex transformation plants, chief source of the nation's wealth?

Such excursions would offer incontestable interest to numerous local and foreign tourists who are not acquainted with the impressive charm of millions of rubber trees planted in uniform arrangement; these artificial forests offer glimpses of endless alleys and magnificent vaults of verdure for tens of kilometers. Moreover it is necessary to have contemplated these unique panoramas from the height of an airplane to conceive of and understand all the difficulties which the rubber pioneers had to overcome some thirty years ago to create and maintain from that time an agricultural and industrial organization truly worthy of great praise.

From other places, the various rubber plantations of Cambodia receive numerous and continual visits of Cambodian and foreign technicians, journalists, and even of those who are simply curious. We should mention here that all these visitors receive from the people in charge of these companies, in spite of their many occupations and cares, the most affable greeting one could desire.

In the course of these last ten years the rubber production of Cambodia has more than doubled, passing from 15,419 tons in 1951 to 27,766 tons in 1955, 33,295 tons in 1958, and 34,154 tons in 1959.

And on their part, exports have followed the same progression, as is shown by the following figures:

<u>Year</u>	<u>Volume (tons)</u>	<u>Value (1,000 riels)</u>	<u>% of Total Exports</u>
1955	22,295	627,000	45 %
1956	29,813	549,000	43 %
1957	34,794	573,000	32 %
1958	37,359	615,000	33 %
1959	38,294	790,000	38 %

Let us note here that the rubber produced in Cambodia, like that produced in South Vietnam, is particularly sought in world markets due to its properties, its purity, and its presentation, which conforms to international standards.

Not only does the rubber industry of Cambodia procure through its exports important cash income and, more particularly, of hard currency, it also contributes a not negligible portion to the formation of the national Budget, since, according to certain official figures, the amount of taxes contributed by the various rubber companies situated in Cambodia reached, in 1957 for example, the respectable sum of 126,458,000 riels; and this figure does not include the tax withholdings from the salaries and bonuses paid to the thousands of employees and workmen of the plantations, the total of which surpasses several million riels each year.

There is space also to emphasize the sustained rate of the increases of area planted in rubber during these last few years, the important expense of which is entirely paid by the various companies according to a well-determined program of self-finance.

The rate of increase and renewal has noticeably increased since 1958, following the wish that it would expressed by His Royal Highness the Prince Norodom Sihanouk, Chief of State. The present programs involve some 13,500 hectares of expansion and some 8,6000 hectares of renewal, which are spaced through a period of time extending from 1960 to 1967/8. Let us add that at the instigation of Monsieur Son Sann, Governor of the National Bank of Cambodia, several meetings have taken place since 1959 in the view of studying the possibilities and the means necessary for a more rapid and still greater accomplishment of the extension programs.

The prime interest which rubber cultivation presents Cambodia is multiplied, so to speak, by the importance of all its ramifications finding expression in multiple activities touching nearly all the domains of the nation's economy: the working classes, the processing industry, transportation, communications, saw mills, commerce, insurance, etc.

In order to appreciate properly the breadth of this sector of the Cambodian economy there is no simpler way than to present the principal figures explaining the functioning, organization, and activities of the various rubber plantations now in full production throughout Cambodia. This presentation is made for our readers with no plan of priority, nationality, and still less of publicity, but only in the order dictated by the information gathered progressively by visiting the companies.

Next week we will start the series of articles with the Societe des Plantations Reunies de Mimot.

2. La Societe des Plantations Reunies de Mimot (22 July 1960)

The Societe des Plantations Reunies de Mimot (Mimot Association of Combined Plantations) was formed on 6 January 1927, chiefly through the contribution of capital by the Compagnie des Messageries Fluviales. Its capital was then 1,600,000 piastres I.C., composed of 160,000 shares with a face value of 10 I.C. dollars. After several modifications, the capital of the company has been composed, since 17 August 1959, of 67,110 shares with a face value of 7,000 Francs Djibouti, or 469,770,000 Fr. Dji = (1 Fr. Dji. = .023 N.F. = 0.23 riels).

Company headquarters are at Djibouti. The president of the administration council is Monsieur Gaston Rueff.

The address is Cambodge Mimot, province of Kompong Cham. The General Director of Plantations since 1 January 1952 has been Monsieur Henri Say. Monsieur Say now being on leave of absence, his assistant, Monsieur Etienne Pellegrin received us with the greatest amiability; let us add that in spite of his youth this person has spent twenty years on the Mimot plantations.

And, to facilitate its operations, the company has an agency at Phnom Penh, 1 Phlaur Neary Khlanan.

The Societe des Plantations Reunies de Mimot brings together four former concessions: first, Plantations Prekchlong (29-9-1928); second, Plantations Kantroy (19-3-1930); third, Plantations Mimot (21-1-1929); and fourth, Plantations Chalang (20-1-1931).

The totality of these plantations comprises a surface area of 9,334 hectares, with a maximum of 8,900 hectares recognized as suitable for the cultivation of heveas trees. On 31 December 1959 the surface area planted in rubber amounted to 6,585 hectares in full production. Thus, the rubber trees from 0-7 years old (the expansions of 1953-1959) take up a surface area of 1,395 hectares, or about 21% of the total planted surface area. Moreover, 570 hectares are planted with heveas trees 16-20 years old (1933-1944) and 4,620 hectares in heveas trees more than 20 years old (previous to 1939).

The quality of heveas trees planted on the various concessions of the Mimot Company is excellent since the production averaged reached 1,510 kilos per hectare in 1959 -- the best average yearly production for an entire plantation, not only in Cambodia, but also in the entire world. It should be pointed out that a yearly production of 2,200 kilos per hectare was obtained the same year from an area of 100 hectares, and that 50% of the planted area in full production has a production surpassing 1,800 kilos per hectare, while only 25% has a production of less than 1,000 kilos. These figures are the best evidence of the constant care taken in the maintenance of the Mimot Plantations, a state of affairs which one finds elsewhere, as we shall see, on the majority of heveas plantations of Cambodia.

Thus, the gross rubber production of the Mimot Company has increased from 3,209 tons in 1950 to 6,729 tons in 1955, and 7,600 tons in 1959. Estimates for this year are 7,850 tons.

The Company ceaselessly follows a program of expansion, the cost of which bears entirely by itself; this program involved 500 hectares this year

(instead of 450 of the previous year) and will involve minimum areas of 450 hectares until 1964, the date at which the expansion will be stopped by the very limits of the concessions possible for heveas cultivation. The expansion program involves an area of approximately 2,310 hectares. Elsewhere, and to maintain the production at the highest level possible, the Company will undertake, starting in 1962, a program of renewal on about 250 hectares a year.

The execution of these works permits one to foresee an expansion of production which, for example, ought to reach 12,6000 tons for 8,900 hectares planted, and approximately 8,700 hectares in full production.

Let us add that on 31 December 1959, the Mimot Company was cultivating, in addition, eight hectares of pepper and three hectares of coffee; the latter expected to be in production in 1961. In 1959, Mimot harvested 42 tons of cotton seed.

But it does not suffice simply to cultivate the heveas trees and gather latex from them. It is still necessary to transform the latter into products accepted on world markets by the ultimate users; and, for this purpose, it is necessary to run one or more transformation plants. The Mimot Company possesses on the Mimot concession itself a factory with an annual treating capacity of 10,000 tons of latex. It produces smoked sheets, sole crepe rubber, ordinary crepe rubber, and centrifuged liquid latex. In 1959 the production could be broken down as follows: 1,542 tons of smoked sheets, 312 tons of sole crepe rubber, 2,315 tons of ordinary crepe rubber, and 3,410 tons (dry) of centrifuged latex. To these tonnages there remains to be added 7,458 kilos of "mix-master," that is to say rubber to which is added a slight percentage of clay or red earth, which, for the manufacture of certain articles, provides wear resistance a little greater than that provided by natural non-mixed rubber.

The clearing of new ground, and the upkeep of the cultivated areas, the proper functioning of the factory, the construction of storehouses and shops and numerous lodgings for employees and workers necessitate a complex of means the importance and high cost of which is often unappreciated by the general public.

The electric energy on the Company's plantations is furnished by a central diesel with a power of 734 KWA, as well as by a central steam engine (in reserve) with a power of 478 KWA. The distribution of water is provided by three Layne wells, each with a production of 120-130 cubic meters per hour. The water thus furnished is potable, which permits supplying not only the transformation plant, but also of the various plantation villages.

The motor vehicle fleet is important. It is necessary, in effect, to assure the transport of the latex from the production centers, the transport of the workers from the villages to work stations, and lastly the transport of the finished products from the plant to Tonle Bet, the point of embarkation on the Mekong, situated some 130 kilometers from Mimot. In order to maintain these services, the Company possesses 75 trucks from three to five tons, nine trailers, and four delivery vans. For the transportation of personnel, 35 light vehicles are in service. In addition

to a light airplane, the Company possesses a suitable landing strip in excellent condition. To these means of transport are added numerous machines necessary to clear the land and construct the motorable roads and individual paths which criss-cross the plantation for a length of several hundreds of kilometers. Thus, we have been able to count rapidly and without error 17 semi-tow trucks, one Unimog Daimler-Benz (four-wheel drive, cross country), nine tracked agricultural machines, ten tired agricultural machines, two steam-rollers (5-15 ton), one crushing roller, one mechanical leveler, one Latil tractor for breakdown service, etc.

As is obvious, the maintenance of this vehicle fleet necessitates the functioning of several shops and the disposition of an important stock of replaceable and pneumatic parts. On the Company's plantations we were able to see one forge and iron-works shop, one mechanical repair shop, one electrical repair shop, one shop for repairs of tracked machines, one carpenter shop, and one service station.

To operate all the activities of the company satisfactorily, the Mimot Plantations maintains a fixed labor force of 4,000 persons, a figure which reaches more than 5,000 during certain times of the year. With their families, this labor force comprises a population of approximately 10,000 people living on the plantations. Cambodians make up 74.50% of the total labor force, Vietnamese and other Asiatics 24.85%, and Europeans, numbering 26,0.65%.

The social works maintained on the plantations by the Company necessitate the expenditure of more than 500,000 riels a year.

For the Health Division there is a 126-bed hospital and 13 infirmaries, all run by one European doctor, one assistant European medical supervisor, 26 indigenous male and female nurses, and two midwives. Examinations and pharmaceutical products are free. The inhabitants of all the villages within a radius of 20 kilometers of Mimot profit equally from the medical service; thus, for the single month of last March, there were as many as 720 examinations given free to those working outside the plantations.

For the Educational Division, in addition to two schools where a group of 20 boarders is preparing all the way to the certificate of studies, one can count 13 schools (one per village), all run by 21 teachers.

The Mimot Company places at the disposition of its supervisory personnel a swimming pool, a private club, and a movie theatre. In preparation is a portable cinema for the villages. In each village is a football field, the sport providing numerous competitions between the various plantations.

The supervisory personnel have an Assistance Fund organized by the Company. And finally, on Sunday and general holidays, all villagers can be transported free by truck from their villages to the city of Mimot, their return transportation assured.

The food supply of the 10,000 inhabitants of the Company equally constitutes a problem. For this purpose the Company maintains the rearing of cows (279 heads), sheep, rabbits, pigeons, and fowl. Each month the company also produces about 3,700 liters of milk, almost all given to the

hospital; 1,000 kilos of butter; and lastly, gardens with a yearly harvest of between 180-200 tons of vegetables.

We must not end this discussion of the Societe des Plantations Reunies de Mimot without mentioning the Scientific Division. At the center there are two laboratories with modern equipment: first, a diagnostic-physiologic laboratory (production control) having at its head an eminent Cambodian chemist, Monsieur Mey-Thol; and second, a research and manufacture control laboratory, directed by a European chemist.

The picture we have just tried to paint, however, should not make one forget the numerous problems which the supervisors of these enterprises have to resolve each day to carry out their work smoothly. Moreover, these problems are just about the same for all the heveas plantations; we will cite them in the conclusion at the end of the various studies on heveas cultivation in Cambodia.

3. La Societe Khmere de Plantations d'Heveas (S.K.P.H.) (29 July 1960)

The Societe Khmere de Plantations d'Heveas (S.K.P.H.), of Cambodian nationality, was formed in July 1959; however, it has functioned in practice since the beginning of the same year.

The registered capital of the Company is 20,000,000 riels represented by 20,000 shares with a face value of 1,000 riels. This capital was raised by a payment in cash of 9,500,000 riels on the part of the Cambodian government and payment in kind by the government to the Company of lands and concessions valued at 2,500,000 riels, the government's share thus representing 60% of the Company's total capital, or 12,000 shares of 1,000 riels. The rest of the capital, 8,000,000 riels, was raised by the cash payment by the Members of the Association of Rubber Planters of Cambodia (Membres de l'Association des Planteurs du Caoutchouc du Cambodge) of 3,000,000 riels and by their payment in kind (material, construction, 395 hectares of rubber trees, etc.) of 5,000,000 riels, or a total of 8,000 shares at a face value of 1,000 riels, or a total of 8,000 shares at a face value of 1,000 riels. Let us add that for some months the government has placed at the disposition of the public a part of the shares of which it is holder, their acquisition being reserved however for people of Cambodian nationality.

The headquarters of the Company is fixed at Phnom Penh -- the Department of Agriculture. The President of the Administrative Council is Monsieur the Director of the Offices of the Ministry of Agriculture.

The general direction of the plantation has been entrusted to Monsieur Thach Chan, of Cambodian nationality.

The concession titles of the Company are on the point of being definitely established by the authorities; they must include in principle all the former lands of the experimental station of Tapao, province of Kompong Cham, which was until 1959 run by l'Association des Planteurs de Caoutchouc du Cambodge (Association of Rubber Planters of Cambodia) -- and include in addition certain neighboring lands representing a total surface area of 6,000 hectares all in one block.

On 31 December 1959 the area planted in heveas was as high as 365 hectares, of which 220 hectares were in full production. The average age of the planted rubber trees is young: 220 hectares are covered with trees 7-17 years old, and 145 hectares with trees 0-7 years old.

Very particular attention having been given to the choice of heveas trees planted on this experimental terrain, the production results are excellent; in 1959 an average production of 1,451 kilos per hectare was obtained, and on one small plot of land 2,600 kilos was obtained, production which very nearly approaches the never-equalled world record of 2,650 kilos obtained by the Compagnie du Cambodge (Company of Cambodia) in 1959 on a surface area of 50 hectares, as we shall discover in the next article.

It is thus that the rubber production of S.K.P.H., which was only 104 tons in 1952, reached 259 tons in 1955, 330 tons in 1957, and 315 tons in 1959. The estimated actual production for 1960 is 320 tons, but this will probably be surpassed. For its first financial year, the Company, then, has been able to present a positive balance sheet, which has permitted the payment of a gross dividend of 50 riels per share.

The General Director of the plantation has just prepared an important program of expansion for the next years. This plan, which is now under study by the Department of Agriculture, works in steps until 1969; for the present year, the expansion will involve 125 hectares, then 250 hectares in 1962, and 400 hectares each year during the period 1963-1969, that is to say a total of about 3,500 hectares. It is estimated that one will be able to obtain a production of about 500 tons of rubber in 1969 and of 580 tons in 1970. Equally foreseen in 1961 is the cultivation of cotton on an area of 25 hectares.

However, the achievement of this program will require great efforts, for the problems which it poses are numerous, and must be solved rapidly. In the first place, the expansion program should receive, as soon as possible, authorization for execution in stages, and the guidance of the Department of Agriculture in connection with the Five-Year Plan. Moreover, it is indispensable for the company to have at its disposal sufficient material means. Until now everything has been done by hand and, as it can easily be conceived, if in having at its disposal from the beginning a property already producing yield, this system can permit a relatively low cost price. But it is no longer practicable when it is a question of thinking on a large scale and of preparing for the future, that is to say of having a fixed and sufficient labor force, necessary lodgings, adequate means of transport, and of creating, in a word, a veritable plantation with all its industrial ramifications.

A problem of prime importance poses itself at Tapao, as elsewhere in other red-earth areas, and that is the problem of water distribution. At this time the plantation is provided only by a shallow well whose discharge permits water distribution between May and November only, the well being dry the rest of the year. In his yearly report, the General Director did not omit emphasizing the urgency of this problem which affects the entire expansion program of the Company; it is necessary that a decision be made to authorize the sinking and outfitting of layne wells to a depth of sixty meters or more.

Only now at its very beginnings, the Plantation of Tapao -- which, one must remember, until 1959 was only an experimental station -- does not possess a transformation factory. All the latex gathered is transported and sold to the Compagnie du Cambodge to be treated there. A payments agreement has been amicably arranged which is relatively simple and seems temporarily satisfactory to the two companies: the prices paid are calculated on the average of the delivery months' world market prices of RSS No. One for latex sold of first quality, and those of brown crape No. Four for the inferior qualities; equally taken into consideration is the means evolution of the current prices of EFAC currencies; and lastly, on the prices thus established, a deduction of four riels per kilo is retained by the Compagnie du Cambodge to cover factory and handling charges.

However, if this system is satisfactory for the time being, its continuance will soon become impossible by reason of the growth of the production of the S.K.P.H. and, still more important, of the Compagnie du Cambodge, whose factory's treating capacity at Chup will not even be sufficient in a few years to treat its own production and that of Tapao, in spite of all the good wishes of those in charge. It is certain, therefore, that it is in the interest of the S.K.P.H. to have its own transformation factory as soon as possible; the money spent for the latex's factory charges represents a dead loss while the release of funds sufficient for the construction of a factory with a capacity of ten tons a day, at least at the beginning, would represent a productive investment for the Company. However, the achievement of this objective can be undertaken only when the Tapao plantation has a sufficient water supply, which constitutes, as we have already pointed out, the most important problem to solve.

At this time, the S.K.P.H. has an old diesel generator (9HP) and a new diesel generator (12KWA) which allow the lighting of the offices and lodgings of the Tapao center.

The motor-vehicle fleet is one of the most limited: two trucks being repaired, one truck bought second-hand, one delivery van (1 ton), and five light vehicles, of which two are jeeps. No mechanical agricultural machinery, no tractor; all ground clearing and maintenance are done by hand, except when the Compagnie du Cambodge kindly and for short periods of time puts some machines at the disposal of the Company. The latter does not possess an airplane for rapid business connections, but the center does have a landing field which, seen from an airplane, is not very encouraging for flying novices, for if the foundation is excellent, the rank weeds grow lushly there to the delight of some cows which graze there in all tranquility. However, a little hedge-hopping to frighten them, and the landing is executed very easily. A mechanical reaper loaned by the Chup Plantation will soon permit the clearing of trails, as well as a football field, well-situated close to the Center.

The S.K.P.H. possesses an embryo mechanical-repair shop and carpenter shop for the maintenance and minor repairs of motor vehicles. The telephone is not yet installed, and no radio sending-receiving station assures communications with the exterior. In case of emergency it is necessary to go to Chup, some 30 kilometers from Tapao.

Elsewhere the management of the plantation devotes all its attention to social work, and the expenditures for this purpose are more than 200,000 riels per year.

Medical attention is given at no charge in an infirmary by a male military nurse and a midwife. Those who are seriously ill are transported to and cared for at the hospital at Chup.

Eighty pupils attend the school, the course of study being administered by two Vietnamese teachers who will soon be seconded by the Cambodian teachers placed at the disposal of the Company by the Department of National Education. The Company contributes to all religious celebrations, and accords substantial support to all sport activities. And all the personnel participate in a retirement fund organized by the Company.

The present labor force includes 200 persons, of which 20 constitute supervisory personnel, the rest being composed of tappers and workers; no European is employed by the plantation. With the members of their families, this work force represents about 560 people living on the plantation. It should be added that an important program of lodging construction is in the process of achievement. The construction of 49 wood houses and 12 thatch houses on pilings is planned.

It is necessary to recognize that with the Company's present resources, the results obtained after the first year of management are excellent. A suitable office has taken the place of the old laboratory; inside, and on the walls, are excellent descriptive inventories maintained up to date, which permit one within a few minutes, to take account of the favorable evolution of this Company's activities. Monsieur Thach-Chan, General Director, places confidence in the future of his plantation, but the great activity which he deploys has need of being daily seconded by the Administrative Council of the Company; in this purpose, and if we may permit ourselves a suggestion, the Council ought to designate a delegated administrator with full powers. The latter, in accord with a technical board, the activities and responsibilities of which would be generally defined, would thus be able to make all the decisions necessary to permit a more rapid development of the plantation.

To end this study, we will point out the excellent collaboration which exists between the direction of the plantation and the supervisors of the Chup plantation, as well as with the Cambodian Institute of Rubber Research (Institut de Recherche du Caoutchouc du Cambodge). This organization is now very closely supervising the works of a campaign of stimulation and a campaign of fertilization undertaken with the direction of Monsieur Thach-Chan.

4. La Compagnie du Cambodge (5 August 1960)

The Compagnie du Cambodge (Cambodia Company) was formed on 14 December 1922 by the financial groups Hallet-Rivaud. Headquarters are at Paris, 13 rue Notre-Dame des Victoires. The address in Cambodia is Chup, province of Kompong-Cham. The Company has an agency at Phnom-Penh at 13 Phlaur Yukanthor; this agency is directed by Monsieur Pierre Mazier.

The registered capital of the Company after various modifications, the most recent of which occurred this year, is composed of 444,000 shares with a face value of 60 NF, that is to say 26,640,000 new francs.

The President of the Administrative Council is the Count of Beaumont.

In addition to its activities in Cambodia, the Cambodia Company possesses in the Malay Archipelago a heveas plantation with an area of a little more than 2,000 hectares, of which 1,578 hectares are in production. It retains elsewhere several holdings in other companies in foreign countries, notably in Oubangui, Cameroon (oil works), in Morocco (citrus fruits), in Kenya (coffee), and more recently in Canada (market-gardening and stock farming).

Since 1957, the general direction of the plantations of the Compagnie du Cambodge has been conferred to Monsieur Gerard Dessertenne. It is thanks to his well-known amiability, as well as to that of his assistant, Monsieur Henri Rose, that we have been able to gather the following information on the important activities of this company.

In Cambodia, the company obtained three concessions: first, the plantation of Chup, with an area of 18,013 hectares; second, the plantation of Peamcheang with an area of 4,966 hectares; and third, the plantation of Krek, with an area of 3,675 hectares, that is to say a total of 26,664 hectares.

On 1 January 1960, the total surface area planted in heveas was 18,673 hectares, of which 11,976 hectares were on the Plantation of Chup, 3,995 on the Plantation of Peamcheang, and 2,702 hectares on that of Krek. The area in production of the three plantations is 15,745 hectares.

The average age of the planted heveas is relatively young, thanks to a campaign of renewal now involving 4,000 hectares of the 10,000 hectares planted during the period from 1923-1930. The expansions (1953-1959) including hevea trees 0-7 years old involve 2,928 hectares, or 15.6% of the total planted surface area; 9,745 hectares represent trees 7-30 years old, and 6,000 hectares of trees more than 30 years old. In summation, one can say that 41% of the total surface area planted is covered with heveas less than 20 years old.

It should be added that the management has reserved an area of 3,370 hectares for the important work of experimentation, of which the results are known world-wide. Moreover, 5 hectares are planted with pepper, producing some 10 tons a year. And lastly, the company has produced 138 tons of cotton seed in 1959.

The mean production of rubber per hectare of the total of the three plantations was 1,092 kilos in 1959. It is interesting to mention the exceptional production of 2,650 kilos per hectare obtained in 1959 on an area of 50 hectares, which constitutes a world record never equalled; moreover, in the same year, a production of more than 2,000 kilos was obtained on 800 hectares, and a production exceeding 2,300 kilos per hectare on 385 hectares. Even the person least interested in the production of heveas can appreciate the excellent results thus obtained, and which finds expression for the company in a constantly progressing rubber production.

This production has passed from 8,285 tons in 1950, to 12,279 tons in 1955, to 16,051 tons in 1958, and to 17,195 tons in 1959, that is to say

50.35% of Cambodia's total production. Estimates for the year 1960 are 18,200 tons.

Through self-financing, the Cambodia Company follows a long program of expansion and renewal as we have already seen. This program now involves 1,000 hectares a year. At the end of 1960, the total planted area will reach 19,500 hectares. However, the limit of the areas on which heveas can be grown being 22,000 hectares, the program of expansion will find itself stopped in some years, and only the program of renewal will be able to be continued, unless between now and then the alteration of some 4,000 hectares of concession not suitable for the cultivation of heveas intervenes, which would permit the anticipation of an expansion of present programs.

At any rate, the work carried on by the company ought to permit reaching a rubber production estimated at 20,000 tons in 1965, at 23,000 in 1970, and more than 30,000 tons in 1975, that is to say an augmentation of more than 69% compared to last year.

These facts already permits one to form a fairly accurate idea of the importance of the material, financial, and labor means necessary for the smooth operation of this vast enterprise. Not only does the Compagnie du Cambodge naturally transform its latex into products destined for export, but it also has equally undertaken the manufacture of several rubber articles.

The company possesses three transformation factories, one on each of the three plantations; their total capacity of treatment being 100 tons a day, of which 85 tons are for the single factory at Chup. These plants produce smoked sheets, sole crepe, ordinary crepe, and centrifuged liquid latex. The 1959 production is broken down as follows: 6,765 tons on smoked sheets, 351 tons of sole crepes, 4,752 tons of ordinary crepe, and 5,327 tons (dry) of centrifuged latex.

Moreover, during the same year the company manufactured 38 tons of sponge rubber, cushions, mattresses, seats for scooters, balloons, and other diverse articles; at present it is undergoing an expansion of its sponge factory, whose production is entirely sold inside Cambodia. In anticipation of the augmentation of this production, new avenues for trade in foreign countries are under study.

The distribution of electric energy, which reached 4,500,000 KWH in 1959, is assured by a modern power-house with a capacity of 2,533 KWA, which represents about 22% of the electric energy possessed by Cambodia for the entire country before 1959.

Four Layne wells permit a water supply amounting to nearly 2,000,000 cubic meters in 1959; merely for the operation of the factories, a discharge of 5,000 cubic meters a day is indispensable. The water thus distributed is periodically analyzed. It is potable, and its consumption by the inhabitants necessitates no supply of chemical products for its purification.

As it stands, the problem of transportation is important. There are on the three plantations of the Company 80 kilometers of asphalt road, and 980 kilometers of wide trails accessible by motor vehicles in all seasons. The motor vehicle fleet includes, among others, 120 trucks which

have covered 2,300,000 kilometers in 1958, for example, 62 passenger vehicles, and 2 light airplanes. The company possesses two airstrips in excellent condition: one of 1,500 meters at Chup and another of 1,200 meters at Krek.

It is impossible in a study this short to enumerate by type and capacity all the mechanical machines which the company possesses to carry on agricultural work, the construction and maintenance of roads, the construction of buildings and lodgings, etc. We shall be content to cite in the aggregate; 35 caterpillar tractors, 16 tired tractors, and 95 mechanical agricultural machines, and diverse T.P..

The upkeep of all this material necessitates the maintenance of a great stock of replaceable parts and spare tires the value of which is estimated to be several million riels. In addition, the company now possesses five complete workshops: ironworks, mechanical repairs, adjustments, electric work, and carpenter shop. Thus it assures itself of the manufacture of its latex drums and diverse truck bodies.

The Scientific Department has not been neglected. A control and research laboratory furnished with all the instruments and apparatus necessary is installed on the Peamcheang Plantation; the works are directed by two chemists, one of Cambodian nationality, Monsieur Meng Tep Mongkoul, the other of French nationality.

The work force used by the Company consists of approximately 9,000-10,000 employees and workers, depending upon the season; 74% of the personnel are of Cambodian nationality; 25.65% of Vietnamese and other Asiatic nationalities; the rest, that is to say 0.65% [sic] is comprised by 44 Europeans. The total of this labor force, including the members of families, represents a population of 35,000 people living in private houses on the three plantations; the importance of the salaries of this personnel can be evaluated by the fact that in 1959, for example, the total taxes paid as withholding tax on salaries and bonuses amounted to 3,276,000 riels in round figures.

Very particular efforts are made by the management to supply the personnel and their families with suitable lodgings; more than 300 wooden houses were constructed in 1959. For some months, and at the very demand of those with an interest in the situation, preference has been given to new wooden houses raised on cement pilings and with tile roofs.

In the domain of health, the hospital of Chup and the two infirmaries of Peamcheang and Kerk include 360 beds. Free medical care is assured by two French doctors, 23 male and female nurses, and six midwives. Sanitary conditions as elsewhere on all the other plantations visited, are excellent; malaria has completely disappeared, the mortality rate is one of the most reduced, and the number of births grows from year to year.

In the realm of education, 1,800 pupils attend several schools, the courses of instruction being administered by 40 teachers.

The supervisory personnel have the use of a swimming pool and a private club, where movies are regularly shown. An important piece of land has just been reserved for the construction of a second club and second swimming pool intended for all personnel. Let us add that football

fields are installed in each village.

All personnel participate in a Relief Fund organized by the company; the latter has also created a savings bank, but in spite of the advantages which it offers to the personnel, they are little inclined towards economy, and use it only rarely or for short periods of time.

Everyone -- including those whose names are enscribed in the gold company book reserved for distinguished visitors -- who has had the occasion to spend some days or hours on the Chup plantation, notably, and to visit its industrial center, are all unanimous in acknowledging the beauty and excellent conditions of maintenance of this immense agricultural domaine. The General Director, Monsieur Dessertenne, justly proud of the enterprise which he competently directs, spares not a moment from being at the disposition of his guests, and that in spite of his numerous duties. (In effect, apart from his very position and apart from the fact that he equally serves the Presidency of the Association des Planteurs du Caoutchouc du Cambodge (Association of Cambodian Rubber Planters), he is continually called upon to bring, at the request of Cambodian authorities, and notably of the Planning Department, his benevolent cooperation to bear on all new agricultural undertakings, whether it be at Ratanakiri, at Kas Khong, at Kompong-Som, or elsewhere. The Compagnie du Cambodge in this way closely collaborates with the development of the plantation of Tapao, as we have already pointed out in a previous article; it furnishes the first surveying stakes to grounds still not well-known, it carries its technical aid everywhere it is needed, it furnishes the bookkeeping for the new plantation at Pailin, it retains the funds necessary for the smooth operation of the Institut de Recherches du Caoutchouc du Cambodge (Institute of Rubber Research of Cambodia), etc.

We wish to end this list of the complimentary activities of the Compagnie du Cambodge, certainly rather incomplete, for we do not wish to tax the modesty of all its employees, but only to emphasize with a few strokes their devotion to a cause in which they have faith: the development of the Cambodian economy.

5. La Societe des Plantations de Kratie (12 August 1960)

The Societe des Plantations de Kratie (Kratie Plantation Association) was formed on 10 June 1927; the principal founders were the Societe de Credit Foncier Colonial (the Colonial Land Bank Society), the Societe Financiere Electrique (The Financial Electric Company), and the firm Thalman & Co. Cambodia is now closely connected with the control of the business.

After various modifications, the registered capital is composed today of 41,392 stock shares with a face value of 1,835 Djibouti francs, that is to say 124,176,000 Fr. Dj. (1 Fr. Dj. = 0.23 riels).

The president of the Administrative Council is now Her Royal Highness the Princess Ping Peang Yukanthor.

The address of the Company in Cambodia is Snoul, province of Kratie. To facilitate its operations, the Company has an agency situated at Phnom Penh, 1 Phlaur Neary Khlahan, directed by Monsieur Francois Stiot.

The General Director of the plantations is Monsieur Robert Gervais, who has held this post since 1953.

The total area of the concession accorded in 1927 is 4,284 hectares, of which about 500 hectares are unsuited for the cultivation of heveas. On 31 December 1959, the area planted with heveas amounted to 3,295 hectares in production. To this should be added 20 hectares of coffee which will be in production in 1963.

The average age of heveas planted on the Plantation of Kratie is relatively high: 2,660 hectares (1928-1931), that is to say 80% of the total planted area, are covered with heveas 29 years old or older; 272 hectares (1938-1939 and 1944), that is to say 7.50% represent heveas 7-20 years old, and 263 hectares, that is to say 12.50% (expansions of 1953-1959) are planted with heveas 0-7 years old.

The quality of the planted heveas, and the good upkeep of the tapping surfaces, in spite of the relative old age of the trees, permit particularly high production obtained on some areas of land: 2,443 kilos on 5 hectares in 1959 and 2,693 kilos on 5 hectares in 1958, figures which demonstrate the excellent results.

The total rubber production of the Kratie Plantations, which was only 877 tons in 1950, amounted to 2,977 tons in 1955, 3,595 tons in 1958, and 3,508 tons in 1959. Estimates for the year in progress are on the order of 3,600 tons.

The company's expansion program in the course of these last years has been reduced by the very fact of the limitation of the area of the concession. Following a modification of the limitation in the apportionment of the capital, the company took the character of a Franco-Cambodian enterprise at the beginning of this year, and has been able, because of this fact, to obtain a new concession which will permit the undertaking of an important expansion program.

This program is to be carried forth on 1,455 hectares and will be staged from 1960 to 1965, the date at which the expansion works will once again be stopped by concession limits; prospecting must be undertaken rapidly to find new terrains suitable for the cultivation of heveas and situated as near as possible to the present center of the plantations. In order to maintain the present level of production, on one hand a program of more widely-spaced tapping will be undertaken, and on the other hand works of renewal from the year 1964 which will be able to be carried on over an area of about 200 hectares a year. The ensemble of these works will even permit considerable augmentation of production, and one can foresee a minimum of 4,000 tons before 1970.

The Compagnie des Plantations de Kratie treats the gathered rubber in a factory with a yearly production capacity of 4,500 tons. It produces smoked sheets and crepes; in 1959 the production amounted to 2,541 tons of smoked sheets, and 967 tons of crepes.

The Company has an electric generator with a power of 450 KWA. On the other hand, it must surmount enormous difficulties for its water supply, which comes from shallow wells with insufficient flow. The water is colored light red, which handicaps the correct treatment of the latex in the factory. Research work is now in progress in view of drilling and equipping Layne wells.

The transport of the rubber from the interior of the plantation and from the warehouses to Tonle Bet, point of embarkation situated on the Mekong some 160 kilometers from Snoul, is carried out with a fleet of 29 trucks. Employee transportation is taken care of with 20 light vehicles. Moreover, five caterpillar tractors permit clearing and maintenance work. And, since this year, the company possesses a light 4-place Cessna airplane, which permits rapid liaison with the agency at Phnom Penh and the other plantations. The private landing strip at the plantation is in excellent condition.

The problem of transporting rubber to Tonle Bet is difficult by reason, first, of the distance, and secondly because of the poor condition of the road. If the boats which go up the Mekong as far as Prek Kak to take on the rubber of the Mekong Company could go up to Kratie without difficulty -- which would necessitate the dredging of certain passages -- a substantial improvement in the transportation conditions would thus be obtained, the distance from Snoul to Kratie being only 90 kilometers instead of the 160 taken to reach Tonle Bet.

The maintenance of the motor pool is assured by one iron-works and one mechanical repair shop. A saw-mill and carpenter shop is also installed at the plantation center.

On 1 June 1960, the work force included 2,313 persons, which represented (with their families) a population of 4,500 people living on the plantation. Cambodians compose 84.31% of the labor force, Vietnamese and other Asiatics 15.04%. The rest, or 0.65%, is comprised of 15 Europeans.

Free medical care is provided by weekly visits of a European doctor and the fortnightly visits of a Cambodian Health Officer. There is a 60-bed hospital on the plantation, the direction of which is entrusted to a European assistant medical chief. More than 200 pupils attend the plantation's five schools, run by seven teachers.

Sporting grounds are installed in each village, and cinemas are going to start this year. All the employees and workers are enrolled in an Aid-Retirement Fund organized by the company. And last, the food provisioning is facilitated by the produce coming from the raising of oxen, sheep, cows, rabbits, and goats.

Recent insecurity, as well as the very limits of the concession, have certainly slowed down the activities of the company during these last few years; the effects can be noted in the decayed condition of certain of the structures and, in particular, in the lodgings supplied to the employees and workers. The introduction of Cambodian capital into the company is going to permit the rapid realization of an important program to improve the conditions of life. Several millions riels have been reserved for this purpose by the company's last administrative council. The efforts will be carried on at the same time as the realization of the expansion and renewal program which we analyze previously, in the construction of new lodgings and a club, in the improvement of the water distribution, and in a better provision of foodstuffs in order to obtain an appreciable elevation in the standard of living of all those who, living on the plantations of Kratie, contribute through their work not only to the proper development of the company, but also to the development of heveas cultivation in Cambodia.

6. La Societe des Caoutchoucs de Kompong-Thom (S.C.K.T.) (19 August 1960)

The Societe des Caoutchoucs de Kompong-Thom (S.C.K.T.) (Kompong-Thom Rubber Association) was formed 25 September 1957. Headquarters are at Abidjan, 13 Boulevard Roum (Ivory Coast).

The registered capital now consists of 41,450 stock shares of face value of 1,500 francs CFA (1 Fr. CFA = 0.21 riel), that is to say 61,875,000 Francs CFA.

The President of the Administrative Council is Monsieur G. de Saporta. The appointed administrator is Monsieur Gerard de Laboulaye.

The Company has an office in France, 12 rue Boissy d'Anglias, Paris, 8e, and also a similar office at Phnom Penh: La Compagnie de Commerce et de Navigation d'Extreme-Orient, 217 Vithei And Eng, B.P. 128., Tel. 156.

The address of the Company in Cambodia is Chamcar-Andong, by Kompong Cham.

The present General Director of the plantations is Monsieur Ernest Girard; he himself was willing to greet us and furnish us with the main facts concerning the activities of the company in Cambodia. It is known that the latter also retains an interest in the African Company of Heveas Plantations (Societe Africaine de Plantations d'Heveas), in the Ivory Coast.

Taking into account the withdrawal of a certain area formerly under concession, the Company now possesses two concessions with a total area of 6,500 hectares, one of 4,080 hectares situated at Chamcar Andong, and the other of 3,500 hectares situated at Chamcar Loeu, the two concessions being about 13 kilometers apart. It should be indicated that of the total surface area, about 1,027 hectares are now well-suited for heveas cultivation.

On 31 December 1959, the area planted in heveas amounted to 3,040 hectares; 1,822 hectares in Chamcar Andong and 1,218 hectares in Chamcar Loeu, of which 1,708 hectares are producing -- 1,461 and 247 respectively. There are, in addition, 10 hectares of seed-bed nursery.

The average age of the planted heveas is relatively young, the expansions having been carried out between 1953 and 1959. Trees 0-7 years old, involve some 1,332 hectares, that is to say 44% of the total planted area. Thus, taking into account these expansions, the average age of the planted heveas is only 15 years; the age goes to 25 years if one takes into account only the areas in production, that is to say 1,708 hectares.

The average production level is excellent; in 1959, 1,398 kilos was obtained on the plantation at Chamcar Andong, and 1,300 on that of Chamcar Loeu.

During the last ten years production has more than doubled. It has risen from 1,120 tons in 1950, to 1,700 tons in 1955, to 2,331 tons in 1959. Estimates for the current year are 2,350 tons.

The Company carries on realization of its expansion program of 389 hectares in 1960, and probably 400 hectares per year in the following years, until the cultivatable areas are used up, that is to say about 1965-1966. With the present age of the planted heveas, no program of renewal is foreseen for several years.

It is estimated that the production of rubber on the two plantations will reach 3,400 tons in 1960, and 4,000 tons in 1970.

The company possesses a transformation factory at Chamcar Andong, with a yearly treating capacity of 2,400 tons. This capacity will soon be insufficient, and the company has, since 1952, proposed construction of a second factory at the Chamcar Loeu plantation.

At present the company is producing smoked sheets and ordinary crepes; in 1959 the production was 1,752 tons of smoked sheets and 571 tons of crepes.

The electric energy comes from a generator whose power is 202 KWS and an auxilliary motor of 5 HP. The energy thus supplied is also insufficient, and the management at this very moment is undertaking a study of the complete reorganization of this power, the expenses foreseen being in the order of 4,100,000 riels.

Given the development of expansion and production, the problem of water distribution is becoming more and more urgent. At present this service is assured by a dam and pumping station situated on the little river Taprok, about four kilometers from Chamcar Andong. Distribution is accomplished by canals, but the quality of the water, colored red, and the power of its flow do not meet present and future needs. Here, also, the drilling and installation of Layne wells will become absolutely indispensable.

The motor fleet is comprised, roughly, of 11 trucks, 6 tractors, and 7 passenger cars. An iron works, mechanical repair shop, and carpenter shop are installed to assure the upkeep of this material. A runway for light aircraft exists at Chamcar Andong.

The supervisory personnel include 37 people, seven of which are Europeans; and the work force includes 1,165 tappers and workmen. With the members of their families, the population living on the two plantations amounts to 2,239 people, which can be divided as follows: 819 men, 346 women, 1,074 children. The total labor force includes some 82% Cambodian, 16.8% Vietnamese and other Asiatic nationalities, and 1.2% Europeans.

In the realm of health, free medical care is assured by two nurses and two midwives, and by the weekly visits of a French doctor.

More than 200 students attend three schools, the courses of study being given by three teachers.

Football fields exist in each village, and the personnel benefit from an Assistance Fund maintained by the company.

The plantations of the company have before them a most promising future, but important financial efforts must be continued without relenting in order to speed up their development, which depends in part on a profound improvement of material means: factory, motor power, water distribution, etc. One can moreover place confidence in the management of the company to resolve the problems rapidly and in the best manner.

7. La Compagnie des Caoutchoucs de Mekong (27 August 1960)

The Compagnie des Caoutchoucs de Mekong (Mekong Rubber Company) was formed on 12 January 1927. Its headquarters is at Paris, 282 Boulevard Saint Germain.

The President of the Administrative Council is Monsieur Armand Julien.

The registered capital, which was originally 30,000,000 francs, is now 2,070,000 NF composed of 69,000 stock shares with a face value of 30 NF.

The Prek kak Plantation, formed by the Compagnie des Caoutchoucs de Mekong, is situated in the province of Kompong-Cham about 40 kilometers upstream from this village on a magnificent plateau of red earth, the well-known cliffs which overhang the right bank of the Mekong, downstream from the curve of Krauchmar.

Its address is : Prek kak, Cambodia. An annex secretarial office is set up at Phnom Penh, 1 Phlaur Neary Khlahan.

Since 1933 the plantation has been run by Monsieur Paul Fournier, who has ceaselessly supervised its development from the first clearing works in 1927 until our times. It is, thanks to his amiability, that we have been able to gather the following facts concerning the activities of what we shall call "his" plantation.

In the beginning, between 1927 and 1929, thriving heveas were planted. From 1929, to reckon the progress of plant selection obtained in the Malay Archipelago and Indonesia, the Administrative Council decided to import from these regions the best slips at that time, and to graft on the spot the totality of the surfaces already planted, an operation which was achieved from 1930 to 1932, certainly holding back the date of exploiting the plants, but permitting the future doubling of production. And, in fact, production which would have gone only as high as 600 kilos per hectare reached a wide-spread 1,300 kilos.

The majority of other plantations, whether in Cambodia or in Vietnam, late-comer to the cultivation of heveas in the Far East, adopted this manner of selection, which now places this country far above the others, and makes Cambodia first, from the standpoint of average production per hectare.

At a time when Cambodia is deciding to embark on a vast program of expansion of heveas cultivation, considering the rivalry of the synthetic rubbers it is absolutely essential and even vital that the new plantations be made only with plant stock of the first grade, thus assuring minimum future yields of 1,500 kilos per hectare.

But let us go back to the history of the Prek kak Plantation, which is moreover a little like that of all the Cambodian plantations, while remembering the factors which slowed down the works during that long period.

From 1934, in effect, the Stevenson Plan intervened, an international agreement destined to raise the prices of rubber which had fallen below the cost price. In the terms of this agreement, the producing and signatory countries (including Indo-China) were forbidden all new expansion.

In 1939 and in 1944, this plan authorized the planting of only 4% of the existing areas.

Then came the events of 1945, followed until July 1954 by a long period of insecurity during which the plantations, never abandoned, were still able only to stay in existence.

However, in 1952, the Administrative Council of the Compagnie des Caoutchoucs du Mekong, confident in the destiny of Cambodia, decided to perfect the value of the concession, the program for which had been envisaged in 1945.

The Prek Kak plantation, which in 1952 covered 2,750 hectares of heveas, added after that 2,513 hectares of expansion, raising the amount of planted area to 5,263 hectares, that is, almost double.

This program is being continued this year, and will be finished in 1961 due to the very limits of the concession. The heveas will then cover about 5,800 hectares of the 6,319 of the concession, the remaining 500 hectares being occupied by installations: factories, villages, the hospital, schools, airstrips, sports fields, roads, etc.

The achievement of this important expansion program -- affected wholly by self-finance -- has been accomplished only by a minute adjustment in the use of mechanized agricultural machines, particularly in the undulating country where the use of very delicate anti-erosion work is required, and where it is nevertheless essential not to disturb the structure of the soil. Precious lessons which will be valuable for the adjustment of earth similar to that in the region of Ratanakiri have been derived from this.

A staged program of replanting the old trees will be undertaken some years from now, and will at no moment effect the production increase. Actually, this program is not urgent, the previous economy in the tapping of the heveas still leaving the possibility of a third exploitation with the latex pans at normal height, which prolongs the tree's revenue life by another eight years.

Production, which is at present in the order of 3,700 tons, or a production of 1,350 kilos per hectare, will reach 5,000 tons in 1970 and 9,000 tons in 1980. Within the limits of the present concession, the production of the plantation of Prek kak will reach a ceiling of 11,000 tons per year.

The plantation has two factories which, in traditional products (smoked sheets and crepes) can treat about 5,000 tons per year. The fabrication of centrifuged liquid latex and new modes of fabrication now under study will permit within the framework of present installations the treatment of all the future production.

The Center, Factories, warehouses and diverse workshops are located on the edge of a river; it is completed by a landing stage of reinforced concrete supporting a pumping station and electric crane.

Cargoboats come there to unload and to load during six months of the year. From December until May a sand bar of little importance some kilometers upstream from Kompong-Cham prohibits even navigation by launches.

This requires trans-shipment from which the riverside populations upstream from this sand bar suffer aftereffects through an appreciable increase in the cost of living.

It is certain that regular dredging of the Kompong Cham-Kratie canal would considerably increase river traffic by draining in the most economic fashion the riverside productions or, even relatively distant, some such as those of the Societe des Plantations de Kratie, of the Societe Khmere de Plantation d'Heveas (Tapao), to speak only of rubber.

The water supply of the central factory, as well as that of the houses which surround it, is assured by the direct pumping of water from the Mekong, water which undergoes complete treatment: precipitation of mud, decantation, filtration, and at last chlorination. The installation treats 100 cubic meters of water an hour.

The electrical energy is furnished by a power-house equipped with gas-oil motors with a total power of 800 CV. The outfitting of the Mekong from the hydraulic point of view would find an important use at Prek kak, where the necessary motor force eventually will be at least doubled.

The labor force includes 1,714 employees and workmen, of which 74.90% are Cambodian, 24.60% Vietnamese and other Asiatic nationalities, and 0.50% Europeans.

Medical care is provided free by one French medical assistant, and nine male nurses; the plantation has an 80-bed hospital and five infirmaries. There are five schools and the instruction of the children living on the concession is provided by 14 teachers.

The particular situation of the Plantation of Prek kak on the bank of the Mekong adds very special charm to a visit of it. From the height of the plateau, one enjoys a magnificent panorama. Without even realizing it, one can spend hours passing along the very well-maintained roads accessible to vehicles which stretch out across more than 400 kilometers to the very interior of the plantation. It is a very beautiful achievement.

8. La Societe "Plantation Cambodgienne de Cultures Tropicales" (2 Sept.1960)

Cambodian and French techniques have been happily united from the time of the formation, in the beginning of 1958, of the Societe "Plantation Cambodgienne de Cultures Tropicales."

The registered capital of the company is 10,000,000 riels; 60% of the shareholders are Cambodian and 40% are French.

The Company exploits a concession of 1,600 hectares situated in the region of Kompong Som, on a lightly rolling plateau at an average altitude of 60/70 meters. This region benefits from a very special rainfall favorable to the growth of heveas. The first ground clearing was started in May 1958 and at the end of 1960 there will be 40 hectares planted with first-choice stock. The growth of trees is excellent, which allows one to forecast even today a satisfying production.

The company has, moreover, undertaken an attempt to cultivate coffee (1,000 plants) and an attempt to cultivate oil palms (1 hectare). These two undertakings are progressing very favorably.

There is no need to insist on the interest which the Cambodian-French company offers for the development of Cambodia's agriculture. One can only congratulate the promoters of this enterprise which, if our information

proves correct, may be busy starting a new business of this kind.

Plantation of Prep Nop

Near the new road of Sihanouk-Ville, before the junction at Ream, is an old heveas plantation -- the Prep-Nop Plantation, with an area of about 10 hectares. The heveas, rather old, are still well preserved, since now they are still producing some 250 to 300 kilos of rubber a day. This rubber is treated in a small factory situated on the very plantation.

Societe Khmere des Plantations de Caoutchouc (S.K.P.C.)

This company, which is rather an association of some tens of Cambodian volunteers confident in heveas cultivation, has a concession of 4,000 to 4,500 hectares 13 miles from Krek, on the road from Mimot to Chup.

According to information gathered on the spot, the president of this enterprise is now Monsieur Suon Vat, and the Director of the plantation, Monsieur Sar Im. Headquarters are located at Phnom Penh.

The formation of the association dates back to 1957, and clearing work began in 1958. At the end of this year, the area planted with heveas will be in the order of 75 hectares. It seems that the association, 100% Cambodian, is meeting certain financial difficulties in carrying out its program successfully, and its members have resorted to manual labor to surmount the shortage of mechanical means. This does not prevent work from advancing, though the yearly rate of expansion (for so important a concession) is far from corresponding to the desire expressed by government authorities.

In order that this enterprise may continue its efforts, which are worthy of the highest interest, and in order that these vast and excellent grounds for the cultivation of heveas be put into production rapidly and in the most favorable conditions, an amount of new capital and equipment seems to be indispensable. These 4,000 hectares could be planted in effect with first quality stock in two or three years at the most, but under the present conditions more than a century and a half will be necessary to obtain the same result. Here is a problem which could be resolved to the satisfaction of all interested parties.

Project of Ratanakiri

Important work has been undertaken, within the framework of the Five-Year Plan, in view of developing the region of Ratanakiri. Some prospecting has been carried out, and an initial area of terrain suitable for heveas cultivation has been marked out. The creation of a seedbed and a graft garden is in preparation. However the work is slowed down by the lack of roads suitable for motor vehicles, and the construction of a road tying this magnificent region in which rests Kratie's future is becoming urgent. However, rapid connections are possible because of the installation of a landing strip for light airplanes.

Familial Plantations

Considerable efforts have been made for two years for the creation of heveas plantations of a type known as "familial," notably by some civil servants who have responded with pleasure and confidence to the suggestion of government authorities.

The area of these diverse plantations varies from 18 to 200 hectares; they are almost all situated on the skirts of the great French plantations already set up, thus profiting by technical example, benevolent advice, and very often by the free supply of plants and heveas seeds.

We were able to visit some of these Cambodian enterprises; they certainly do not all present the same appearance. One of them, for example, situated on the edges of the Prek kak Plantations, can not actually qualify for the title of "plantation." The few heveas seeds, among the best planted, which have germinated have produced young plants wilting in a jumble of wild plants; no care has been taken of the cultivation; seeds were sown only in hoping or in wishing that nature would do the rest. But, on the other hand, we are happy to point out the excellent state of the works carried on elsewhere, and to cite, among others, the plantation called "Du Douanier," situated near Krek, and that of "Mekung de Krek." The first extends across 25 hectares; the proprietors have followed the advice of those in charge of the Krek plantation (Compagnie du Cambodge); the clearing plantation work, and maintenance are worthy of praise, and these enterprises can serve as models for familial plantations. Their success is certain, but it is still necessary that the cares of maintenance be sustained during the five or six years until the time of the first tapping.

Also, worthy of mention is a concession of some 4,000 hectares obtained rather recently by a Cambodian personality whose spirit of initiative is well-known throughout Cambodia. This plantation is a neighbor of those of the Reunies de Mimot Plantations. The work allows the anticipation of the creation of a new and great plantation which will certainly exceed the rank of the plantations known as "familial."

All together, one can total up, then, some 900-1,000 hectares of area planted with heveas at the end of 1960; this is an excellent result. Let us add at last that following a rather recent decision, the National Equiping Bank (La Caisse National d'Equipment) is authorized to bring its help to the development of these new enterprises; some records shall actually be organized.

Conclusion

The series of articles published by Realites Cambodgiennes concerning the cultivation of heveas in Cambodia permits one to take stock of the important development of this agricultural sector from 1926-1927, the dates of the first clearing work, up to our day. It is also possible to see the production of the near future; the production of rubber should reach more than 50,000 tons per year 1970, as compared with 39,294 tons in

1959. And on its part, the area planted with heveas will increase from 36,774 hectares at the end of 1959 to more than 49,000 hectares in the next six or seven years. During the same period, the work of renewal will include some 8,000 hectares.

It is undeniable that this expansion program is far from being negligible, and that its execution requires important financial and material efforts. But it remains limited by the very limitations of the great companies' concessions. Moreover, its complete realization depends on the favorable solution of several problems, notable of which are manpower and water distribution.

However, the Cambodian authorities, at the instigation of His Royal Highness Samdech Norodom Sihanouk, Chief of State, are certain that still more important efforts can be undertaken to obtain not only an acceleration of the rate of expansion already foreseen, but also a growth of the latter. The objective to be reached would be 4,000-5,000 hectares of expansion per year for the entire country.

As we have already said, several projects established for this end are in study. The choice of the project able to offer the most advantages is difficult, given the importance which we now know of the diverse aspects of the problem. We are, however, certain that a complete understanding shall come about soon between parties concerned and that the indispensable union of the financial and technical means now available will permit, in normal and favorable conditions, a new rise in Cambodia's cultivation of heveas.

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